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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,177	08/27/2003	Rainer Gadow	4965-000161	4785

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EXAMINER

PAIK, SANG YEOP

ART UNIT PAPER NUMBER

3742

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

10/649,177

Applicant(s)

GADOW ET AL.

Examiner

Sang Y. Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 17 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-15 and 17 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date \_\_\_\_\_  
 4) ☐ Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3 and 5-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al (US 3,978,315) in view of Mizunoya et al (US 4,693,409) or Bube (US 4,273,822), Coates et al (US 6,037,572), and Lorenz et al (US 4,960,978) or Baudry et al (US 4,973,826).

Martin shows the ceramic cooktop claimed cooktop (1) made of glass ceramic, an intermediate electrically conductive layer (2) made of a cermet material having a metal matrix of cobalt and a ceramic material including ceramic oxides, an insulating layer (3) made of cordierite, and a heat conductor layer (4). However, Martin does not show the thermally sprayed structure bonding layer on a selected surface of the cooking plate with the intermediate layer is located on the bonding layer.

Bube shows a bonding layer in the form of a glazing paste having alumina in the thickness of 2 to 12 micrometers applied to a ceramic substrate to bond a metal layer onto the ceramic plate. Mizunoya shows a metal oxide bonding agent layer in the thickness of 20 microns formed on the ceramic plate to bond the ceramic plate with a metal layer. Coates shows a ceramic layer that is thermal sprayed to form a thermally sprayed structure. Coates teaches that such structure enhances the adherence of the ceramic layer to the ceramic substrate. In view of Mizunoya or Bube, it would have been obvious to one of ordinary skill in the art to adapt Martin

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et al with the bonding layer to further securely bond the ceramic substrate and the metallic layer such as the cermet intermediate layer, and further in view of Coates, it would have been obvious to apply the thermally sprayed structure to increase or improve the adherence bonding of the bonding layer to the ceramic cooking plate.

Lorenz and Baudry show the heating elements with its associated insulating and heat conducting layers are selectively provided on the cooktop. In view of Lorenz or Baudry, it would have been obvious to provide Martin, as modified by Mizunoya or Bube, and Coates, with the thermally sprayed bonding layer structure as well other layers be applied in a selected area where the heating zone is selected.

With respect to claims 6, 7, 11 and 12, Bube further teaches that the thicker the bonding layer, stronger the bond between the metal layer and the ceramic substrate, and it would have been obvious to one of ordinary skill in the art to provide the bonding layer having the claimed thickness to further enhance the bonding strength.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al in view of Mizunoya et al or Bube, Coates, and Lorenz et al or Baudry et al, as applied to claims 1, 3 and 5-15 above, and further in view of Strange (US 5,728,638).

Martin in view of Mizunoya or Bube, Coates, and Lorenz or Baudry discloses the ceramic cooktop claimed except the intermediate layer is made titanium oxide or zirconia.

Strange shows a cermet material having titanium oxide (titania) or zirconia. Strange shows that its cermet material provides a mechanically strong material with corrosion and wear resistance properties.

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In view of Strange, it would have been obvious to one of ordinary skill in the art to adapt Martin, as modified by Mizunoya or Bube, Coates, and Lorenz or Baudry, with the intermediate layer made with titania or zirconia to provide a mechanically strong material that also has corrosion and wear resistance properties.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al in view of Mizunoya et al or Bube, Coates, and Lorenz et al or Baudry et al, as applied to claims 1, 3 and 5-15 above, and further in view of Alexander (US 3,110,571).

Martin in view of Mizunoya or Bube, Coates, and Lorenz or Baudry discloses the ceramic cooktop claimed except the claimed composition of the bonding layer made of the claimed alumina and titania.

Alexander shows that the elements such as alumina and titania are well known in the art that such materials can be alternatively used as the bonding material or the mixtures thereof. While Alexander does not show the claimed composition, it would have been obvious to use it alone or mix such alternatively suitable bonding materials since they compose similar bonding properties to adequately provide the bonding properties, and it would further have been obvious to mix such materials if and when other material is not readily available.

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guan (US 5,725,826) in view of Coates et al (US 6,037,572).

Guan shows a ceramic vessel having a ceramic cooktop made of clay which is known in the art as an aluminum silicates that are a type of glass ceramic materials, an electrical heat conductor layer (40), an insulating layer (12), and an annular groove (13) surrounding a rim area

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of the insulating layer. However, Guan does not show that the insulating layer has the thermally sprayed structure.

Coates shows a ceramic plate with a dielectric ceramic layer having the thermally sprayed structure that was applied with the high temperature paint or plasma or flame sprayed ceramics. In view of Coates, it would have been obvious to one of ordinary skill in the art to adapt Guan with the thermally sprayed insulating layer to provide a good adherence of the insulating layer to the ceramic plate.

***Response to Arguments***

6. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y. Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Paik

Sang Y Paik  
Primary Examiner  
Art Unit 3742

syp